

# Museum Information Standards in the 21st Century

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Museums have been developing automated systems since the 1960s. Generally, these systems were stand-alone systems used for limited applications, such as registration of donors and objects and occasionally collections management. Automated museum systems were developed to track and contain descriptions of museum property locally. Developed by staff or contractors for use by trained staff, museum systems were idiosyncratic. While the museum systems required standardization of data to avoid the "garbage in, garbage out" phenomenon, the systems could afford to use locally derived information standards. Until recently, museums had no major incentive to develop national standards such as those used by libraries and archives.

## *Why Have Museum Information Standards?*

As we approach the year 2000, the situation has altered significantly. Museums are now interested in joining the networked information environment, developing distributed systems, and sharing information internationally with colleagues, scholars, and other customers. Standardized data is a prerequisite for such sharing and development.

Scholars use common search strategies when researching in networked systems and/or distributed system environments. Without internationally standardized information or built-in cross-references from one synonymous term to another, researchers will fail to use museums systems effectively. How is the poor researcher to know if the museum has selected the term "bureau," "dresser," "dressing chest," "chest, dressing," "drawers, chests of," or "chest of drawers," without searching all six terms? More often than not, the researcher will give up in frustration. Museum data standardization, indexing, and cross-referencing capabilities will have a fundamental impact on how well our systems please our customers in the future.

Standardizing these terms also provides some assistance to the museum curator, who just wants to get the information into the computer correctly. Imagine having to make these decisions

afresh each time an object requires description. Without using standards, each act of cataloging becomes a major etymological debate. Such decision-making takes time and costs money. If the museum follows international standards, the skills learned at one museum are transferable to the curator's next job. This also helps to ensure that the best qualified person is selected for the new position—not simply the person who knows a particular software package. When standards are in place, training programs may be shared among many institutions. Shared standards provide economies of scale for data interchange, training of staff and researchers, and for maximizing the amount of data discovered during research across networked systems.

The development of the National Information Infrastructure has given additional urgency to this need, as it provides a low-cost way for all institutions to share data on collections. Starting in the 1980s, a number of organizations, including the J. Paul Getty Trust, the Documentation Committee of the International Council on Monuments (ICOM), the Committee on Computer Interchange of Museum Information (CIMI), and the Museum Computer Network have begun working on supporting or developing museum information standards. Several sets of documentation standards have been issued.

## *What Kinds of Standards Are Needed?*

In general, museum automation specialists talk about the need for four basic kinds of standards: data value standards; data content standards; data structure standards; and information system standards.

**Data value standards** are the authorized terminologies or vocabularies used to classify and describe the museum objects and collections. Data value include not only the selected term itself, but also how that term is expressed, punctuated, classified, and formatted (e.g., style). The Getty's *Art and Architecture Thesaurus* and Blackaby et. al, the *Revised Nomenclature* (AASLH) are data value standards; as are the descriptive rule books, *Archives*, *Personal Papers*, and *Manuscripts* and the *Anglo American*

Cataloging Rules. Data values can also be called authority files, value tables, classification systems, and style manuals. If posted electronically on the system, data value standards may also be used to assist researchers in identifying fruitful search terminology when the researcher has been searching on a non-productive term.

**Data content standards** are the information system's data fields (i.e., broad categories of information such as artist, inventor, date, object name) that determine the system's capabilities to answer research questions and serve business functions. Data content standards are the "buckets" that hold the data values (e.g., actual terms). The Machine Readable Cataloging Format (MARC) of the Library of Congress is a data content standard. Others include list of fields selected by the Canadian Heritage Information Network (CHIN) and there is also CIMI's Standards Framework for Computer Interchange of Museum Information. The purpose of the information system (e.g., collections management, scholarly research, registration) should shape what data content standards are selected, rather than selecting standards based upon an ideal model of what a computer system should be. Certain functions, such as recording gifts in a deed of gift, require specific data content standards, such as the donor's name, the date, the object name, and so forth.

**Data structure standards** are the system specific linkages forged between different categories of data. These linkages express relationships between the data fields. The linkages affect the way that the system functions. It may be desirable to provide data at several different levels, for example, an overview of the entire museum's holdings for Internet posting, an overview of all materials from a specific donor, and so forth. Another example is a hypertext system in which certain words will be highlighted indicating the possibility of traveling from the concept in the text to a separate database which contains further

information on the concept. The relationship between those separate files is indicated within the system's data structure standards. The CIMI Standards Framework mentions a number of existing technical standards used within other non-museum communities such as the computer and publishing communities.

**Systems standards** are the final category of information standards. Systems standards determine how a system's hardware and software work together to ensure searchability, data security, and other system capabilities. Primarily developed by the computing community and information professionals, these standards include Internet's standards and the Open Systems Environment. Developed to provide functionalities such as system security, networking, or directory capabilities, these standards are necessary to ensure that museum systems can work within networked environments. Museums which ignore these standards do so at their own peril; as they severely limit the future capability of their systems to operate in the museum information environment of the 21st century.

To effectively become major players in the International Information Infrastructure and to please our customers, museums must master the issue of information standards. The networked information environment of the 21st century demands that museums not only provide information on our collections electronically, but that we learn to work with pre-existing standards developed by our colleagues in computing, information science, archives, and professional organizations and currently in use in networks and the Internet. As museums begin to have a hand in shaping these standards, museum systems will become more useful to our colleagues and our customers by facilitating research, supporting greater electronic or "virtual" visitation, sponsoring educational access, and encouraging partnerships.

<p><b>The following entry was not received in time to be included in the <i>Cultural Resource Training Directory</i>. Remote Sensing/Geophysical Techniques for Cultural Resource Management</b>  <i>Date and location:</i> May 22-26, 1995, Cahokia Mounds State Park, Collinsville, IL  <i>Cost:</i> \$475.00            Practical application of geophysical equipment and aerial photographic techniques available for</p>	<p>identification, evaluation, conservation, and protection of cultural resources. Hands-on use of magnetometers, conductivity and resistivity meters, metal detectors, ground penetrating radar, and low altitude large scale aerial reconnaissance.  <i>Intended Audience:</i> Archeologists, architects, cultural resource managers and specialists  <i>Contact:</i>            Steven L. De Vore            U.S. Department of the Interior</p>	<p>National Park Service            Rocky Mountain Region            Interagency Archeological Services            12795 West Alameda Parkway            P.O. Box 25287            Denver, CO 80225-0287            Telephone: 303-969-2882  <i>Topics:</i> Archeological (treatment), Architectural (Treatment), Documentation (Treatment), Evaluation, Identification, Interpretation, Preservation Planning, Registration, Section 106, Technology.</p>
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